

TITLE OF THE INVENTION**POST SYSTEM FOR A RAILING**

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FIELD OF THE INVENTION

The invention relates to the field of railings and in particular to a post system for railings.

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BACKGROUND OF THE INVENTION

Railings for any number of outdoor applications are well known. For example, residential decks, pool decks, playgrounds, etc., all utilize any number of conventional railings. Such railings are typically made of pressure treated lumber 15 or aluminum particularly suited for outdoor use. Railings typically include hand and base rails attached to post supports. Post supports, in turn, attach to a deck surface or the like.

Building codes have been implemented in various jurisdictions throughout the 20 world. Typically, in order to safeguard the public, these codes set out minimum performance requirements. One such requirement relates to railing posts. Here, posts are required to meet certain horizontal load requirements.

In the past, when such load requirements are applied to traditional posts, the 25 posts have been known to fail by either deflecting more than what is allowable under code or by simply disengaging from a deck surface. Consequently, such posts are undesirable, particularly in the residential railing industry where homeowners frequently install or build their own railing systems.

30 Accordingly, a need exists for an improved post system for railings which overcomes the deficiencies noted above.

SUMMARY OF THE INVENTION

According to one aspect of the present invention there is provided a post system for a railing. The post system may include a railing post having first and second ends and a post base connectable to the first end of the railing post. The post base may include an inner member and an outer member substantially encasing the inner member. The inner member may be made from a first material while the outer member may be made from a second material. The first material may be steel while the second material may be aluminum.

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The post system may further include fasteners for connecting the post base to said railing post. The fasteners may have dimensions of Ø8x80 mm.

According to another aspect of the present invention there is provided a post system for a railing. The post system may include a railing post having an elongated tubular body and first and second ends. The post system may include an insert snugly insertable within the first end of the railing post and include an engagement member to engage the elongated tubular body. The post system may further include a post base connectable to the first end of the railing post.

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According to yet another embodiment of the present invention there is provided a post system for a railing. The post system may include a railing post having first and second ends and a post base connectable to the first end of the railing post. The post base may include a base member and a housing member connected to and extending from the base member. The housing member may be adapted to engage the railing post.

According to yet another embodiment of the present invention there is provided a post system for a railing. The post system may include a railing post having an elongated tubular body and first and second ends and an insert snugly insertable within the first end of said railing post. The insert may include an engagement

member to engage the elongated tubular body. The post system may further include a post base having an inner member and an outer member substantially encasing the inner member. The inner member may be made from a first material and the outer member may be made from a second material. The post 5 base may be connectable to the first end of the railing post and may include a base member and a housing member connected to and extending from the base member. The housing member may be adapted to engage the railing post.

Other aspects of the invention will be appreciated by reference to the detailed 10 description of the preferred embodiment and to the claims that follow.

BRIEF DESCRIPTION OF THE DRAWINGS

15 The preferred embodiment of the invention will be described by reference to the drawings thereof in which:

Fig. 1 is a perspective view of a railing attached to a deck surface incorporating a 20 post system in accordance with a first embodiment of the present invention;

Fig. 2 is a perspective view of a representative post system of the railing of Fig. 1;

Fig. 3 is a perspective exploded view of the representative post system of Fig. 2 25 as shown from below depicting a portion of a railing post;

Fig. 4 is a perspective view of a post base of a representative post system of Fig. 2 along with a portion of a railing post; and

Fig. 5 is a cutaway view of the post system of Fig. 2 depicting a portion of a 30 railing post;

DESCRIPTION OF THE PREFERRED EMBODIMENT
OF THE INVENTION

Reference will now be made in detail to the presently preferred embodiments of the invention, one or more examples of which are illustrated in the drawings. Each example is provided by way of explanation of the invention, and not meant as a limitation of the invention. For example, features illustrated or described as part of one embodiment can be used on another embodiment to yield still a third embodiment. It is intended that the present invention include such modifications and variations as come within the scope and spirit of the present invention.

Referring to FIG. 1, a railing 10 is generally shown attached to a deck surface 11. Railing 10 includes top and bottom rails 12 and 14, end posts 16 and 18 and pickets 20.

FIG. 2 illustrates a representative post system 22 attached to a deck surface 11. Post system 22 includes a railing post 24 having first and second ends 26 and 28 and a post base 30 connectable to the first end of the railing post. To determine whether a post system meets local building code requirements, a horizontal load along line 13 is generally applied to the post system.

Generally, to meet certain building codes, railing post 24 must meet a minimum load requirement before it can bend or fail. When a horizontal load is applied along line 13 forces are directly transferred from railing post 24 to post base 30.

Therefore, certain building codes require that post base 30 remain attached to deck surface 11 when a horizontal load is applied to railing post 24. The effect of a horizontal load on a railing post and consequentially on a post base is discussed in further detail below.

Referring to Figs. 2 and 3, railing post 24 is generally an elongated tubular body with an inner wall 38. As those skilled in the art will appreciate, the cross

sectional shape of railing post 24 may be square as depicted in Fig. 3 or any other suitable shape, for example, a circle. Second end 28 includes an open ended head 32 shaped to receive top rail 12. Railing post 24 may also include a base rail support 34 to receive the bottom rail 14.

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Preferably, open ended head 32 and base rail support 34 are shaped to snugly fit top and bottom rails 12 and 14 to secure the top and bottom rails to railing post 24. As those skilled in the art will appreciate, other methods may be used to further secure the top and bottom rails 12 and 14 to railing post 24, such as 10 fasteners.

Referring to Figs. 3 and 5, to provide rigidity to the railing post 24, an insert 27 is snugly insertable within first end 26 of the railing post. Insert 27 is shaped to frictionally engage inner wall 38 of railing post 24. Insert 27 may include an 15 engagement member 25 which may aid in securing the insert to railing post 24. Engagement member 25 may be connected to insert 27 via welding for instance. Preferably, engagement member is integrally formed with insert 27. As those skilled in the art will appreciate, the length of the insert as well as material of construction may be any length or substance, respectively, suitable to reinforce 20 the railing post and may vary depending on local building codes. Depending upon local building codes, post base 30 may be connected to first end 26 of railing post 24; in other instances, post rail 24 and insert 27 may simply be attached directly to a surface without the need for a post base.

25 Referring to Figs. 4 and 5, post system 22 includes a post base 30 connectable to railing post 24. Post base 30 includes a base member 42 and a housing member 44 connected to and extending from the member. Housing member 42 may be connected to base member 42 via welding or adhesives. Preferably, housing member 42 and base member 42 are integrally formed. Base member 30 30 includes holes 46 whereby fasteners 45 may be inserted to attach post system 22 to a surface. Fasteners 47 with a dimension of Ø8x80 may be used to

connect post base 30 to railing post 24. Additionally, post base 30 may be connected to railing 24 via welding or adhesives.

As illustrated in Fig. 5, post base 30 includes an inner member 48 and an outer

5 member 50 substantially encasing the inner member. With traditional post systems a post base is generally constructed from a single material, for example, aluminum or steel. An aluminum post base is light weight, however, does not provide the necessary strength to meet certain horizontal load requirements. On the other hand, a steel post base is strong enough to meet certain horizontal load
10 requirements, but is prone to rusting in inclement weather.

Therefore, to take advantage of the properties from various materials, post base 30 is constructed of two differing materials. In this embodiment, inner member 48 is constructed from a first material, for example, steel, and outer member 50 is
15 constructed from a second material, for example, aluminum.

Housing member 44 rises up from base member 42 and is adapted to engage the railing post 24. Housing member 44 includes an inner wall 52 and an outer wall 54. Typically, traditional post systems employ a housing which snugly fits
20 around a railing post. These systems fail to meet certain local building codes as horizontal loads, when applied to a railing post, are directly transferred to the inner wall of a housing of a post base. The direct transfer of force from the railing post to a post base causes the post base to detach from a surface.

25 To overcome the above problem, a circumferential gap 56 exists between the inner wall 52 and railing post 24 when the railing post is connected to the post base 30. This gap is created by forming a housing member that is dimensioned larger than the railing post. When a horizontal load is applied to railing post 24, no forces are transferred to inner wall 52 until the railing post bends to meet the
30 inner wall. Thus, railing post 24 would have to bend well-before any forces are transferred to post base 30. As those skilled in the art will appreciate, depending

on local building code requirements, the amount of separation or gap required between a railing post and the inner wall of the housing may be of any size suitable to meet code.

- 5 As local building codes vary from jurisdiction to jurisdiction, post system 22 may include any combination of the above elements. For example, a post system may simply include a railing post connectable to a post base. The post base may have an inner member and an outer member, both of which are constructed of two differing material. When additional rigidity is required for the railing post, an
10 insert may simply be inserted into the railing post. To enhance the connection of the post base to a surface a circumferential gap may exist between a railing post and post base. As those skilled in the art will appreciate, local building codes may dictate any combination of the above.
- 15 It should be appreciated by those skilled in the art that various modifications and variations can be made in the present invention without departing from the scope or spirit of the invention. It is intended that the present invention include such modifications and variations as come within the scope of the appended claims and their equivalents.

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